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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,832	02/28/2004	Kyung-Ju Choi	ZM921/04004	7344

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JOHN F. SALAZAR
MIDDLETON & REUTLINGER
2500 BROWN & WILLIAMSON TOWER
LOUISVILLE, KY 40202

EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,832

Applicant(s)

CHOI, KYUNG-JU

Examiner

Norca L. Torres-Velazquez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-29 and 33-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-29 and 33-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 22-24, 26, 33, 38, 39, 41, 42 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by HEALEY (US 2002/01877701).

HEALEY discloses a filter media that includes a middle-filtering layer formed from at least one meltblown layer. (Abstract) Figure 2 illustrates a filtering component 14 formed from three meltblown layers. [0029] The meltblown layers have different gradients of basis

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weight (Refer to claim 23). It is the Examiner's interpretation that such gradients provide for gradients in porosity.

3. Claims 22-24, 26-29, 33-39, 41-42 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0960645 A2.

The EP '645 reference relates to a disposable vacuum cleaner bag composition. The reference discloses a three-layer vacuum cleaner bag construction (refer to Figure 4) that comprises a filtration grade meltblown layer with fibers with diameters in the range of 1-15 micrometers and air permeability of 100-1500 L/(m² x s) and a high bulk meltblown layer with fibers with diameters in the range of 5-20 micrometers and an air permeability of 300-8000 L/(m² x s). (Refer to Table 1) With regards to the mode the meltblown material is produced, refer to [0054] in which the reference teaches attenuating the filaments upon formation.

4. Claims 22-27, 33-34, 36, 38, 39-41 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by HEALEY (WO 01/32292 A1).

HEALEY discloses a filter media comprising a synthetic micro fibers polymer fine fiber wherein the diameter of the fibers is between about 0.8 to about 1.5 microns. (Abstract) In Figure 2, the reference discloses a filter media composite 10 that includes a coarse fiber layer 16 and a meltblown polymer fine fiber web 14, which is mechanically entwined with coarse fiber layer 16. (Refer to page 22, lines 24-30) The reference teaches that the coarse synthetic micro fiber, e.g. meltblown, material which serves as a prefilter has a fiber diameter between about 5 to about 20 microns. (page 5, lines 1-5) In Figure 3, the reference teaches additional layers. It is the Examiner's interpretation that the mechanically entwined fibers read on the presently claimed entangled portions.

Claim Rejections - 35 USC § 103

5. Claims 25, 40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over prompt EP 0960645 A2 as applied above, and further in view of HEALEY.

The EP '645 reference is silent to the entangling of the fibers.

HEALEY provides a similar fibrous filter media and teaches mechanically entwining the fibers to bond the layers. (Page 22, lines 24-30)

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the filter media and provide with it with mechanical entwining with the motivation of bonding the layers without the use of adhesives.

Conclusion

6. Conversion of Air Permeability:

(CFM) x 5.08 = liters per square meter of sample per second

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

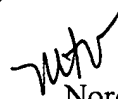
KLEIN (US 2002/0056684 A1) - discloses a multi-layer filter element, with all the individual layers made of synthetic fibers. (Abstract, Figure 1, claims)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-5:00 pm and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez
Primary Examiner
Art Unit 1771

August 5, 2005